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EXAMINER	
COFFY, EMMANUEL	
ART UNIT	**PAPER NUMBER**
2157	

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/967,307	BATKE ET AL.	
	Examiner	Art Unit	
	Emmanuel Coffy	2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 September 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☒ Claim(s) *22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 February 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 01125102
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to the application filed on October 2nd, 2001. Claims 1-22 are pending. Claims 1-22 are directed to a system for an "Industrial Control System with Autonomous Web Server."

Priority

2. Request for the benefit of provisional application 60/285,177 is hereby acknowledged; said benefit is granted.

Claim Objections

3. Claim 22 is objected to because of the following minor informality. Claim 22 is a dependent claim, which claims dependency on 10 whereas claim 21 a dependent claim preceding 22 owes its dependency to claim 20.

A claim (22) that depends from a dependent claim (10) should not be separated by any claim (21) that does not also depend from said dependent claim (10). It should be kept in mind that a dependent claim may refer to any preceding independent claim. In general applicant's sequence will not be changed. See MPEP §608.01(n).

Claim Rejections - 35 USC § 102

> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1, 4,12, 14 and 15 are rejected under 35 U.S.C. §102(e) as being anticipated by Lindner et al. (US 6,640,140).

Lindner teaches a programmable logic controller for use as part of an industrial control system or as part of n automated system and a corresponding method, the controller including an interface to the Internet, and including a web server allowing a remote computer to access web pages maintained by the controller providing information relevant to the control function of the controller such as control sensor readings and, optionally, information about the status of the control system. (See abstract.)

As to claim 1, Lindner teaches a Web interface module for an industrial control system including a programmable logic controller for executing an industrial control program, the programmable logic controller communicating over a controller network with I/O modules, the I/O modules sending and receiving electrical signals to and from an industrial process, the Web interface module comprising; (See Fig. 1.)

an Internet interface for connecting to a Web accessing communications medium; (See Fig. 1. (70))

a network interface for connecting to the controller network; and (See Fig. 1. (22b, 60))

a processing unit executing a stored program to communicate directly with at least one I/O module and to pass data between the Web accessing communications medium and the I/O module; (See Fig. 1. (11))

whereby communications may be had with the I/O module without intervention of the programmable logic controller. (See col. 3, lines 54-64.)

Claim 4:

As to claim 4, Lindner teaches the Web interface module of claim 1 wherein the processing unit executing the stored program also opens at least one connection on the connected messaging network between the programmable logic controller and the Web interface to transfer data between the programmable logic controller and the interface. (See col. 4, lines 19-59.)

Claim 12:

As to claim 12, Lindner teaches an industrial control system for an industrial control system comprising: (See Fig. 1)

a plurality of I/O modules sending and receiving electrical signals to and from an industrial process; (See Fig.1 (23a, 23b, 23c))

a controller network communicating with the I/O modules; (See Fig. 1. (22b, 60))

a programmable logic controller attachable to the controller network to execute a stored control program to exchange data with the I/O modules over the controller network to control the industrial process; and (See Fig. 1. (70))

a Web interface module including: (See Fig. 1. (30a))

(a) an Internet interface for connecting to a Web accessing communications medium; (See Fig. 1. (33) and Fig. 2)

(b) a network interface for connecting to the controller network; and (See Fig. 1. (22b))

(c) a processing unit executing a stored interface program to communicate directly with at least one I/O module and to pass data between the Web accessing communications medium and the I/O module; (See Fig. 1. (11))

whereby communications may be had with the I/O module without intervention of the programmable logic controller. (See col. 3, lines 54-64.)

Claim 14:

As to claim 14, Lindner teaches an industrial control system for an industrial control system comprising: (See Fig. 1)

a plurality of I/O modules sending and receiving electrical signals to and from an industrial process; (See Fig.1 (23a, 23b, 23c))

a connected messaging network communicating with the I/O modules; (See Fig. 1. (22b, 60))

a programmable logic controller attachable to the controller network to execute a stored control program to open connections and exchange data with the I/O modules over the connected messaging network to control the industrial process; and (See Fig. 1. (10a))

a Web interface module including: (See Fig. 1. (30a))

(a) an Internet interface for connecting to a Web accessing communications medium; (See Fig. 1. (33) and Fig. 2)

(b) a network interface for connecting to the connected messaging network; and (See Fig. 1. (22b))

(c) a processing unit executing a stored interface program to open connections on the connected messaging network between at least one I/O module and the Web interface module and to pass data between the Web accessing communications medium and the I/O module; (See Fig. 1. (11))

whereby communications may be had with the I/O module without intervention of the programmable logic controller. (See col. 3, lines 54-64.)

Claim 15:

As to claim 15, Lindner teaches the industrial control system of claim 14 wherein the processing unit executing the stored interface program also opens at least one connection on the connected messaging network between the programmable logic controller and the Web interface to transfer data between the programmable logic controller and the interface. (See col. 4, lines 19-59.)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2, 7-8,13, 18-19 are rejected under 35 U.S.C. §103(a) as being unpatentable over Lindner et al. (US 6,640,140) in view of Papadopoulos et al. (US 6,061,603)

Lindner teaches the invention substantially as claimed including a programmable logic controller for use as part of an industrial control system or as part of n automated system and a corresponding method, the controller including an interface to the Internet, and including a web server allowing a remote computer to access web pages maintained by the controller providing information relevant to the control function of the controller such as control sensor readings and, optionally, information about the status of the control system. (See abstract.)

Claim 2:

As to claim 2, Lindner teaches the Web interface module of claim 1 wherein the processing unit also executes the stored program to receive a write disable command from the programmable logic controller causing the stored program to allow direct reading of data from the I/O module but not direct writing of data to the I/O module; whereby conflicting writing of data to the I/O module is prevented. (See col. 4, lines 35-45.)

Lindner does not expressly address the reading and writing of data. However, Papadopoulos specifically discloses read/write of data at col. 6, lines 38-45.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner as articulated above with the

reading and writing of data as taught by Papadopoulos, because this system would afford greater control over remote devices.

Claim 7:

As to claim 7, Lindner teaches the Web interface module of claim 1 wherein the processing unit executing the stored program opens connections on the connected messaging network with a plurality of I/O modules and wherein the processing unit includes an I/I image table and wherein the passing of data between the Web accessing communications medium and the I/O module separately reads and writes data between the Web accessing communications medium the I/O image table, and between the I/O modules and the I/O image table; where the transfer of data between the Web accessing communications medium and the I/O is implemented through the I/O image table. (See Fig. 1)

Lindner does not expressly address the reads and writes data and the I/O image table. However, Papadopoulos specifically discloses read/write of data at col. 8 Table 1.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner as articulated above with the reads and writes data and the I/O image table as taught by Papadopoulos, because this system would afford greater control over remote devices.

Claim 8:

As to claim 8, Lindner teaches the Web interface module of claim 7 wherein the processing unit executing the stored program reads and writes data between the I/O

image table and the I/O modules in a predetermined order. (See Fig. 1 (11), col. 4, lines 42-45 – a ladder program is executed rung by rung in a rigid manner).

Lindner does not expressly address the reads and writes data and the I/O image table. However, Papadopoulos specifically discloses read/write of data at col. 8 Table 1.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner as articulated above with the reads and writes data and the I/O image table as taught by Papadopoulos, because this system would afford greater control over remote devices.

Claim 13:

As to claim 13, Lindner teaches the industrial control system of claim 1 wherein the processing unit also executes the stored program to receive a write disable command from the programmable logic controller causing the stored interface program to allow direct reading of data from the I/O module but not direct writing of data to the I/O module; whereby conflicting writing of data to the I/O module is prevented. (See Fig.1.)

Lindner does not expressly address the reading and writing of data. However, Papadopoulos specifically discloses read/write of data at col. 6, lines 38-45.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner as articulated above with the reading and writing of data as taught by Papadopoulos, because this system would afford greater control over remote devices.

Claim 18:

As to claim 18, Lindner teaches the industrial control system of claim 14 wherein the processing unit executing the stored interface program opens connections on the connected messaging network with a plurality of I/O modules and wherein the processing unit includes an I/O image table and wherein the passing of data between the Web accessing communications medium and the I/O module separately reads and writes data between the Web accessing communications medium and the I/O image table, and between the I/O modules and the I/O image table; where the transfer of data between the Web accessing communications medium and the I/O is implemented through the I/O image table. (See Fig.1 (22b, 60)).

Lindner does not expressly address the reads and writes data and the I/O image table. However, Papadopoulos specifically discloses read/write of data at col. 8 Table 1.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner as articulated above with the reads and writes data and the I/O image table as taught by Papadopoulos, because this system would afford greater control over remote devices.

Claim 19:

As to claim 19, Lindner teaches the industrial control system of claim 18 wherein the processing unit executing the stored interface program reads and writes data between the I/O image table and the I/O modules in a predetermined order. (See Fig. 1 (11), col. 4, lines 42-45 – a ladder program is executed rung by rung in a rigid manner).

Lindner does not expressly address the reads and writes data and the I/O image table. However, Papadopoulos specifically discloses read/write of data at col. 8 Table 1.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner as articulated above with the reads and writes data and the I/O image table as taught by Papadopoulos, because this system would afford greater control over remote devices.

6. Claims 5 and 16 are rejected under 35 U.S.C. §103(a) as being unpatentable over Lindner et al. (US 6,640,140) in view of Brown et al. (US 6,542,925.)

Lindner teaches the invention substantially as claimed including a programmable logic controller for use as part of an industrial control system or as part of n automated system and a corresponding method, the controller including an interface to the Internet, and including a web server allowing a remote computer to access web pages maintained by the controller providing information relevant to the control function of the controller such as control sensor readings and, optionally, information about the status of the control system. (See abstract.)

Claim 5:

As to claim 5, Lindner teaches the Web interface module of claim 1 wherein the connected messaging network is selected from the group consisting of ControlNet, DeviceNet and EtherNet. (See Fig. 1 (22b, 60)).

Lindner does not expressly address ControlNet, DeviceNet and EtherNet. However, Brown specifically discloses proprietary networks at col. 4, lines 31-36.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner as articulated above with the proprietary network configuration as taught by Brown, because this system would be versatile.

Claim 16:

As to claim 16, Lindner teaches the industrial control system of claim 14 wherein the connected messaging network is selected from the group consisting of ControlNet, DeviceNet, and EtherNet. (See Fig. 1 (22b, 60)).

Lindner does not expressly address ControlNet, DeviceNet and EtherNet. However, Brown specifically discloses proprietary networks at col. 4, lines 31-36.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner as articulated above with the proprietary network configuration as taught by Brown, because this system would be versatile.

7. Claims 6, 9-11, 17 and 20-22 are rejected under 35 U.S.C. §103(a) as being unpatentable over Lindner et al. (US 6,640,140) in view of Brown et al. (US 6,542,925.) and in further view of Papadopoulos et al. (US 6,061,603)

Lindner teaches the invention substantially as claimed including a programmable logic controller for use as part of an industrial control system or as part of n automated system and a corresponding method, the controller including an interface to the Internet, and including a web server allowing a remote computer to access web pages maintained by the controller providing information relevant to the control function of the

controller such as control sensor readings and, optionally, information about the status of the control system. (See abstract.)

Claim 6:

As to claim 6, Lindner teaches the Web interface module of claim 1 wherein the Web accessing communications medium is selected from the group consisting of a wire cable, a fiber optic cable, and a radio link. (See Fig. 1)

Lindner does not expressly address communications media. However, Brown specifically discloses such media as a wire cable, and a radio link at col. 13, lines 41-44.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner as articulated above with the communications media as taught by Brown, because this system would be versatile.

Neither Lindner nor Brown teaches fiber optic cable. However, Papadopoulos does at col. 4, lines 64-65.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner and the communications media as taught by Brown with the fiber optic cable of Papadopoulos, because this system would be versatile.

Claim 9:

As to claim 9, Lindner teaches the Web interface module of claim 1 wherein the connected messaging network comprises a parallel backplane between the Web interface module and the programmable logic controller and a serial network between the backplane and the I/O modules.

Lindner does not expressly address a serial network as the messaging network. However, Brown specifically discloses such network at col. 4, lines 25-35.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner as articulated above with the serial network as taught by Brown, because this system would be versatile.

Neither Lindner nor Brown teaches a parallel backplane. However, Papadopoulos does at col. 4, lines 25-35.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner and the serial network as taught by Brown with the backplane of Papadopoulos, because this system would be versatile.

Claim 10:

As to claim 10, Lindner teaches the Web interface module of claim 9 wherein the network interface of the Web interface module attaches to the backplane.

Lindner does not expressly address above limitation. However, Papadopoulos specifically discloses such configuration. (See Fig. 2 and Fig. 3.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner as articulated above with the configuration taught by Papadopoulos, because this system would be more robust.

Claim 11:

As to claim 11, Lindner teaches the Web interface module of claim 9 wherein the network interface of the Web interface module attaches to the serial network.

Lindner does not expressly address a serial network as the messaging network. However, Brown specifically discloses such network at col. 4, lines 25-35.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner as articulated above with the serial network taught by Brown, because this system would be versatile.

Neither Lindner nor Brown teaches network interface of the Web interface module attaches to the serial network. However, Papadopoulos specifically discloses such configuration. (See Fig. 2 and Fig. 3.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner as articulated above with the configuration taught by Papadopoulos, because this system would be more robust.

Claim 17:

As to claim 17, Lindner teaches the industrial control system of claim 14 wherein the Web accessing communications medium is selected from the group consisting of a wire cable, a fiber optic cable, and a radio link.

Lindner does not expressly address communications media. However, Brown specifically discloses such media as a wire cable, and a radio link at col. 13, lines 41-44.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner as articulated above with the communications media as taught by Brown, because this system would be versatile.

Neither Lindner nor Brown teaches fiber optic cable. However, Papadopoulos does at col. 4, lines 64-65.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner and the communications media as taught by Brown with the fiber optic cable of Papadopoulos, because this system would be versatile.

Claim 20:

As to claim 20, Lindner teaches the industrial control system of claim 14 wherein the connected messaging network comprises a parallel backplane between Web interface module and the programmable logic controller and a serial network between the backplane and the I/O modules.

Lindner does not expressly address a serial network as the messaging network. However, Brown specifically discloses such network at col. 4, lines 25-35.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner as articulated above with the serial network as taught by Brown, because this system would be versatile.

Neither Lindner nor Brown teaches a parallel backplane. However, Papadopoulos does at col. 4, lines 25-35.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner and the serial network as taught by Brown with the backplane of Papadopoulos, because this system would be versatile.

Claim 21:

As to claim 21, Lindner teaches the industrial control system of claim 20 wherein the network interface of the Web interface module attaches to the backplane.

Lindner does not expressly address above limitation. However, Papadopoulos specifically discloses such configuration. (See Fig. 2 and Fig. 3.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner as articulated above with the configuration taught by Papadopoulos, because this system would be more robust.

Claim 22:

As to claim 22, Lindner teaches the industrial control system of claim 10 wherein the network interface of the Web interface module attaches to the serial network.

Lindner does not expressly address a serial network as the messaging network. However, Brown specifically discloses such network at col. 4, lines 25-35.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner as articulated above with the serial network taught by Brown, because this system would be versatile.

Neither Lindner nor Brown teaches network interface of the Web interface module attaches to the serial network. However, Papadopoulos specifically discloses such configuration. (See Fig. 2 and Fig. 3.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner as articulated above with the configuration taught by Papadopoulos, because this system would be more robust.

8. Claim 3 is rejected under 35 U.S.C. §103(a) as being unpatentable over Lindner et al. (US 6,640,140) in view of Hauet (US 6,799,077.)

Lindner teaches the invention substantially as claimed including a programmable logic controller for use as part of an industrial control system or as part of n automated system and a corresponding method, the controller including an interface to the Internet, and including a web server allowing a remote computer to access web pages maintained by the controller providing information relevant to the control function of the controller such as control sensor readings and, optionally, information about the status of the control system. (See abstract.)

Claim 3:

As to claim 3, Lindner teaches the Web interface module of claim 1 wherein the network interface provides a connected messaging protocol.

Lindner does not expressly address a network interface providing a connected messaging protocol. However, Hauet specifically discloses such network at col. 4, lines 35-45 (IP datagrams.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Lindner as articulated above with the serial network as taught by Brown, because this system would be versatile.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Coffy whose telephone number is (571) 272-3997. The examiner can normally be reached on 8:30 - 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571) 272-3997. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Emmanuel Coffy, Esq.
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EC
Jan 10, 2005

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